

REMARKS

The applicants appreciate the Examiner's thorough examination of the Application and request reexamination and reconsideration of the Application in view of the following remarks.

Applicants have amended claims 19 and 20 to clarify that the signal is an input analog signal. These amendments are made only to more clearly define the claim language and are not made for reasons related to patentability.

The subject invention results from the realization that an improved isolation system with analog communication across an isolation barrier which can accommodate both ADSL and POTS and can use transformers or capacitors, can be achieved with an isolation barrier circuit having at least one isolation element, a digital to analog circuit having an analog output connected to the isolation barrier and an input for receiving an input digital signal to be communicated across the isolation barrier and an analog to digital circuit having an input coupled to the analog output of the isolation barrier circuit for providing a digital output signal. It was further realized that performance could be enhanced by shaping the analog signal to be transmitted through the isolation barrier so that it exhibited a constant signal average.

Claims 1-7, 13-16 and 21-24 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,550,993 to Ehlig et al. Ehlig et al. describes a data processing device and method of operation with content switching. Fig. 10 of Ehlig shows a digital to analog (D/A) converter used with a data access arrangement (DAA). The output of the DAA can be fed to an analog to digital converter (A/D). However, Ehlig et al. does not describe the construction of the DAA nor its components. Moreover, Ehlig et al. does not describe or suggest that the signal supplied to the DAA is a constant average signal.

In contrast to Ehlig et al., claim 1 as amended of the subject application includes a digital to analog circuit configured to provide a constant average analog output signal. As noted in the subject application at page 8, lines 13-18 and at page 12, lines 17-20, an encoder or a modulator, for example, can be used to provide the constant average signal. This structure is recited in claims 2 and 3 as amended. As further noted in the subject application, a benefit of using a constant average signal is that it will pass normally through an isolation barrier. Moreover, new claim 21 which depends from claim 1 recites that the analog to digital circuit can be configured to decode the constant average input analog signal, which can be accomplished by using, for example, either a decoder or demodulator. Ehlig et al. does not disclose or suggest the use of a constant average signal across an isolation barrier circuit.

Claim 1 of the subject application recites: "An isolation system with analog communication across an isolation barrier comprising: an isolation barrier circuit having a least one isolation element; a digital to analog circuit configured to provide a constant average analog output signal to the isolation barrier and having an input for receiving an input digital signal to be communicated across the isolation barrier; and an analog to digital circuit having an input coupled to the analog output of the isolation barrier circuit for providing a digital output signal." (Emphasis added.) Ehlig et al. does not disclose or suggest a digital to analog circuit configured to provide a constant average analog output signal to an isolation barrier circuit.

Regarding claims 17-20, the Examiner stated in the Office Action dated July 28, 2003 that: "a constant average voltage denotes an inherent feature of an analog communications system across an isolation barrier." (See the Office Action dated July 28, 2003 at page 5.) However, a constant average signal in the nature of a periodic signal is not an inherent feature of analog communications across an isolation barrier as the Examiner asserts. Nothing in Ehlig

et al. discloses or suggests that the output signal from D/A 539 in Fig. 10 of Ehlig et al. is a constant average signal, rather than a typical analog signal. The subject application teaches how to use an encoder or modulator to provide a constant average signal to an isolation barrier, rather than provide a typical analog signal. If a constant average voltage were an inherent feature of analog communications across an isolation barrier, then the extensive teachings of the subject application, i.e., Figs. 5-8B and 12 and their associated descriptions, would not have been necessary.

Moreover, the Examiner has given no support whatsoever for his assertion that a constant average voltage is an inherent feature of an analog communications system across an isolation barrier. The Federal Circuit has held that "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (emphasis added, citations omitted).

In the present case, the Examiner has not met the Federal Circuit's requirement that the inherent feature is necessarily present in the thing described in the reference and that it would be so recognized by persons of ordinary skill. Rather, the Examiner has merely made a conclusory statement that a constant average voltage is an inherent feature of an analog communications system across an isolation barrier, without providing any evidence whatsoever to support this assertion.

Accordingly, claims 1-7, 13-16 and 21-24 are patentable over the prior art.

Applicants respectfully request that the Examiner withdraw the rejection of these claims under 35 U.S.C. §102(b).

Claims 10, 12 and 17-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ehlig et al. and in view of U.S. Patent No. 5,500,895 to Yurgelites. Also, claims 8-9 and 11 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Ehlig et al. and in view of either U.S. Patent No. 6,587,560 to Scott et al. or U.S. Patent No. 6,081,586 to Rahamin et al. Also, claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Ehlig et al. and in view of U.S. Patent No. 4,387,273 to Chea, Jr. However, none of the Yurgelites, Scott, Rahamin or Chea, Jr. references discloses or suggests a digital to analog circuit configured to provide a constant average analog output signal to an isolation barrier. Since each of these claims rejected under 35 U.S.C. §103(a) depend from claim 1, they are thus patentable for the reasons stated above and further patentable because these dependent claims contain one or more additional features.

Each of the Examiner's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that the application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned, or his associates, collect in Waltham, Massachusetts, at (781) 890-5678.

Respectfully submitted,



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